

or plastic, as appropriate and required. The second or bottom most pulley 77 is commonly known or referred to as a strap loop and may also be made of metal or plastic, or composite as appropriate and required.

[0060] The topmost pulley 75 includes a central region 77 to which is permanently fastened a first portion of strap 78 approximately 2.25 inches long which anchors the top pulley 75 a fixed distance from the frame anchor point 46/48. A second region 79 of the top pulley 75 provides a region through which a portion of strap 80 attached at one end to the frame anchor point 46, 48 of the respective side of the chair. Strap portion 80 begins from the frame anchor point 46/48, threads downward through the bottom pulley 77; upward through the second region 79 of the top pulley 75 and then subsequently attaches to the sides of the backrest 34 forming strap portion 64 previously described in connection with FIG. 12. The bottom pulley 77 is fixed by strap 82 to the rear of the arm rest 37 forming strap portion 62 previously described. The dashed lines show the path of the strap 80 through the top and bottom pulleys 75/77. Additional perspective views of the pulley system 71 are shown in FIGS. 14 and 15.

[0061] In another embodiment of the present invention, a deployable, foam padded headrest along with one or more headrest and chair back support elements may be provided. In one embodiment shown in FIGS. 16A and 16B, the backrest 34 may be provided with several flat aluminum bars 100 which serve to keep the shape of the back element upright and support a headrest 102.

[0062] In the preferred embodiment, four flat aluminum bars 104, FIG. 17 may be provided. In this embodiment, the aluminum bars may have pre-bends 105, 106 in them to generally match the shape of the user's back. The aluminum bars 104 provide lumbar support and support for the headrest 102.

[0063] In this embodiment, the top bars 104a and 104c are approximately 21 inches in length and the bottom bars 104b and 104d approximately 14 inches in length. The top and bottom bars overlap in a central region 106 and may be provided with a bend or custom bent by the user to achieve a comfortable fit in the area of the chair back 34. The top bars 104a and 104c are sewn into the seat except where they overlap with the lower bars enabling the top bars to pop off the lower bars to enabling folding of the seat back 34, FIG. 18.

[0064] In the preferred embodiment of the swinging chair with headrest and back support according to the present invention, a complete backrest 34 and headrest 102, FIG. 19 may be provided utilizing two poles 108 and 108a. The two poles 108 are similar in style to tent poles running up the length of the backrest 34 to fully support the headrest 102. The poles 108 may be in one piece or preferably, each pole is in 2 segments of similar length connected by a shock cord, to allow them to disassemble for packing. The lower half of each pole 108 is fully inserted into a sleeve where it can stay when packed. The topmost tip of each upper half of each pole 108 is inserted into a small pocket near the headrest 102 to keep it located and securely attached to the headrest. The poles are tent style poles connected together with a shock cord allowing them to be folded for disassembly and storage yet stay connected together so as not to be lost. The top portion of the seat back or backrest 34 may include padding 110 to add additional support and stability to the back of the chair. The bottom portion 112 of the padded area aligns

generally with the location of the poles segments which facilitates folding of the backrest for storage and packing. In one embodiment, the headrest 102 may be a pillow type device to provide more comfort and support for the user, as needed. The headrest 102 may be attached with hook and loop fasteners to the seat back 34 so it can be relocated, removed and/or adjusted as needed or desired by the user.

[0065] In a second embodiment, another feature of the present invention is a frame for a portable swinging or hanging chair that can be set up on terrain typically found at camping sites or at the beach, or even around the home on a patio or living room floor, and providing an improved frame for such a hanging and swinging portable chair that prevents the fabric of the hanging chair from hitting the bottom of the frame when at rest or when swinging. Such a frame interfaces with the ground by static legs similar to ordinary chairs while providing the dynamic action of swinging that happens between the frame and the hammock-like suspended chair portion, allowing the swinging to take place independent of the frame. Further, this new solution is easy to disassemble or transform, lightweight and packs small and the various legs and other frame pieces are or may be coupled together so as not to be lost.

[0066] As shown in FIGS. 22 and 23A one feature of the present invention is a crossbar 180 having a generally U-shaped configuration which provides clearance between a chair seat bottom (not shown) hanging on the chair frame and the top portion 182 of the crossbar 180.

[0067] Another feature of the present invention is to provide pole tips 184, FIG. 23B having a hole or opening 186 through which can be threaded an elastic cord (not shown) which serves to keep the legs together with no loss of any pieces. In a similar fashion, the bottom leg caps 188, FIG. 24, may also include a hole or opening 190 through which and elastic cord can be fastened. In this manner, all of the upright pieces in the leg pieces may be connected by shock cord to allow the chair or seat frame to pack into a small package while at the same time ensuring that none of the pieces become lost.

[0068] Another feature of the bottom leg caps 188 according to one feature of the present invention is their size or dimension. Since the bottom leg cap 188 is meant to be inserted into the aluminum tube of the lower leg 198, the outside diameter (OD) of the end cap 188 is intentionally made larger than the OD of the leg tube by approximately 0.8 mm. In this manner, the sharp edge 200 at the end of the aluminum tube 198 will grab onto the rubber end cap portion 202 of the end cap 188, thus preventing the end cap 188 from accidentally falling off the end of the aluminum tube 198.

[0069] A further feature of the present invention is the provision of knurled ferrule 192, FIG. 23C between the top upright 194 and the bottom upright 196. The knurled ferrule 192 includes a knurled exterior surface and wherein the knurled ferrule 192 is provided for strength between the top and bottom upright members 194/196 while at the same time allowing the top and bottom uprights 194/194 to be disassembled for storage and packing.

[0070] Yet another feature of the present invention is the provision of an elastic in the back rest of a portable hanging and/or swinging chair as shown in FIGS. 26A and 26B. The elastic 104 is provided between an approximate midpoint on the seat back 100 and the corner of an armrest 102 as shown in FIG. 26B. The elastic member 104 may be provided having a knot 106 proximate its end and a metal washer 108